



# NECESSITY OF YOGIC EXERCISES TO NORMALIZE BODY PHYSIOLOGICAL PROCESSES

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## ABSTRACT

Health is an important asset of the human life. It depends upon proper functioning and co-ordination of all organ of the body. The main components of health are food and oxygen which help us to produce energy that is used for body growth and work. During the process some waste products like carbon dioxide, ammonia etc. are also produced and excreted by the system. All these are done by the actively working organs. But due to some illness, medication and the way of daily life routine, the body organs may become less active and the process of energy production, synthesis and waste excretion may be slowed down. It may result in further sickness. Therefore, there is a need to keep the body organs in active mode ever and the only way to do this is to supply nutrition, proper amount of oxygen and instant removal of toxic wastes. The easiest way to accomplish is to improve breathing and blood circulation system. Blood supplies nutrient and oxygen to each cell of the body and removes the toxic wastes through lungs and excretory system. Once these processes are normal this body remains healthy, active and lives a long life. The simplest way to improve functioning of the body parts is to do yogic exercises and to practice some breathing exercises

which by way of contracting and expanding the muscles, organs and pressing and relaxing the nerves can keep the whole body in a sound working position.

**KEYWORDS:** Yogic Exercise, Pranayama, Contraction, Relaxation, Nutrition, Excretion

## INTRODUCTION

Yog and Yogic exercises have been practiced in India since very long time, even from Vedic period. These practices were also adopted by other countries through this migration of Indian yoga teachers there. Yoga is an art to attain the body health. One example of yoga teacher's Vikram Chaudhary from West Bengal who taught and spread yoga in America in 1970s. He used a hot chamber with 44°C temperature to perform yogic exercises. The heating increases the blood circulation and performing yogic exercises at high temperature improves the blood circulation and supply of nutrients and oxygen to each body organ which then function properly and efficiently.

Vikram Chaudhary cured the thrombosis of one U.S. President and the brain tumor of a Hollywood actress.

Yogic exercises if performed, technically, can regulate the functioning of intestine, secretory glands, muscles and nervous system.

The practice of yogic exercises is mandatory for those people who are not involved in physical activities. It requires 30- 40-minute time regularly. It has been proved that yogic exercises improved the performances of athletes and sportsman also, these exercises activate and strengthen the body immune system to combat the pandemics like corona. It is thus the need of everyone to maintain a good healthy body by adopting the yoga in daily routine of life.

**Yoga:** The term yoga means to join two things. In concept of human body, the joining or coordination of life processes is yoga. In fact, our body is an excellent machine that performs all the body processes in coordination still there may be a

disturbance or imbalance that cause a disease.

There are different forms or types of yoga like Raj Yoga, Karm Yoga, Bhakti Yoga, Laya Yoga and Astang Yoga. Among them hath yoga is related to asana and pranayama exercises. These exercises balance physical and mental health and improves the energy generation processes. Hath word is made up of two words "Ha" means 'Moon' and "th" means 'Sun'. In the state of thought a person breathe with left nostril and during physical work, breathe by right nostril. For good health each nostril should breathe for 12 hours each to balance the body and energy both. Practice of asana keeps the muscles, organs, bone joints and nerves in stimulated form.

There are large number of asana but in most yoga books 84 main asana are described with their techniques and benefits. In daily life to perform and practice them all is not feasible. Hence one has to choose some selective poses and pranayama exercises according to their body structure, health and availability of time.

## Requirement of Asanas

We all know that body organs work in an efficient coordination. For example, when we eat food, it is passed into esophagus through muscular contraction, different parts of intestine receive digestive enzymes to digest food, from associated glands. Digested food is passed into the blood which then supplies nutrients to each body cell. Blood also carries oxygen inhaled by lungs. To every cell. The food is then organized to produce energy to synthesize biomolecules and energy for physical work. The unused compound that are produced during this process like carbon dioxide, ammonia etc. are removed from the body immediately and excreted out from the body through the work of kidney and associated parts. All these processes occur smoothly

and efficiently to help the body grow and keep it healthy. If any obstacle in any organ occurs, all the processes will be affected and the coordination may be defined as sickness. In case your physical activities increases then it needs more energy to perform hard work. This need more oxygen, more food and fast actions of related organ which are not possible all of a sudden. For this you need practice and proper activation of related organs. During fast sports activity one need a practice suitable for that sport but this needs an active and healthy organ to act quickly and in coordination with other organs. A fast and hard physical activity requires more energy. Thus, more oxygen and a strong working heart to pump the blood. Thus, blood vessels heart, muscles, lungs and chest muscles should be strong and healthy. Yogic exercises and pranayama techniques are convenient way to make them strong efficient and properly functional. This is very simple to press an organ for a short time and then release the pressure. Different asanas and pranayama techniques perform only this function.

We need to practice different asana for different organ activation. Only one or two asanas cannot improve the functions of all the organs.

You are therefore are need to select a range of asanas for activation of most of your body parts/organs or glands in order to remain active and healthy.

#### Physiological effects of asana

A single type of physical activity is not sufficient to improve the functioning of all body parts. Let it be games, sports or any other physical work. Even a single asana cannot fulfill this requirement. Our body has many joints in limbs, back bone and different organs in different places inside it. One has to make them active individually using different asana and also by breathing techniques.

Let us start to activate limb joints, we need fold palm, elbow, shoulder, less feet, knee, hips and rotate them up and down, left and right. The techniques stress to hold the limbs in folded state for some times and then relax. The other poses in this class are Pawan Muktasana and Nokasana which fold legs and also the backbone and hold them for 30-60 seconds in the final position. These techniques press the blood vessels and nerves of these areas momentarily to slow down the blood circulation and nerve conduction. On relaxation the blood flows slightly at high speed and nerves also become active. Due to this change large amount of blood flows into these parts supplying more nutrients and oxygen for energy production and waste products removal quickly from these parts. This is the basis of activating the function of body organs. By moving and stretching of joints and fast blood flow no waste product will be accumulated in joints. They will remain flexible. Similar effects on joints can be made by practicing some sitting possess like Padmasana, Sidhasana, Vajrasana, Singhasana, and Parvatasana etc. Sometimes we need to stretch the bone joints particularly of back bone to make our body flexible and relaxed. We then use Pachimotasana, Yogmudra and Shashankasana. Opposite to this, are joint compassing possess like Bhujangasana, Dhanurasana, Matsayasana and chakrasana etc. In all these postures one holds the final pose for 1-2 minute. The effect of these is to increase the blood supply in these parts which eventually provide more nutrients and oxygen to them. During these asanas the contract breath is also maintained. In some poses the breath is held for some duration in the final position and normal breathing is practiced in relaxed position.

The holding of breath improves the lung muscles strength to

release more oxygen quickly and absorb carbon dioxide as well. This way the blood becomes free of carbon dioxide and keeps the buffering power of the blood at optimum level. Otherwise, long time stay of carbon dioxide in blood will cause acidic condition due to formation of carbonic acid ( $H_2CO_3$ ) which is formed by water and carbon dioxide. Strengthening of breathing organ muscles help a person to work hard and physical activities. The twisting of backbone to left and right help to keep the vertebrae in a proper position and keep the spinal cord to help in conduction efficiently. Usually, we go to parlor for body massage. This also applies the trick of providing pressure and relaxation of blood vessels and nerves of our body parts. This increases blood flow and better nerve conduction. One has to keep in mind that all the actions of body muscle depend upon nerve conduction and sound and active brain without which the muscles will not work. Everything depends upon proper blood supply to brain and proper nerve functioning. For this Sarvangasana and Halasana are important asanas. The legs and body remain upward and neck in compassed position. The heart then sends more blood to the brain and spinal cord is activated. Similarly, Garudasana, Trikonasana, and Suryanamaskar provide strength, flexibility, to various body joints. All these asanas also give some stretching and relaxation to stomach, liver, kidney, thyroid gland and pineal gland and improves the capacity due to proper blood supplies. The slow motion of blood may result in the deposition of some compounds like cholesterol in them which does not occur when blood flow is normal and is increased some times. When all the organ and glands are active the nutrients are used by cells efficiently mainly the sugar and lipids to be utilize for the growth and energy production.

Pranayama exercises helps to regulate breath and to strengthen respiratory system as a whole. A few of them are Kapalbhat, Bhramari, Bhastrika and Nadishodhan. All these strengthen the lungs muscles, abdominal muscles, effect brain and helps to remove toxic carbon dioxide and water from lungs, activate their related nerves and purifies the blood the holding of breath inside and outside is an excellent technique to improve the oxygen supplies to the cells and removal of carbon dioxide instantly and efficiently.

#### Biochemical effects

The folding of limbs and to hold in this posture for a minute or two increases the blood supply in the affected parts. This blood is the carrier of nutrients, hormones and oxygen to the cells of these parts and bring back the carbon dioxide and ammonia to be excreted through lungs and kidney. So, there is no danger of deposition of calcium and its suits in the joints due to better blood flow joints becomes well nourished, active and flexible. Without the movement of joints, they become stiff causing disease like arthritis. The stretching, relaxing and pressing exercises of stomach causes a hormone adrenaline to release from adrenal gland of Kidney. This hormone activates the enzyme glycogen phosphorylase after a cascade of reactions. This enzyme degrades glycogen of muscles to produce glucose which upon oxidation in cells provide energy in the form of ATP. This energy is used by muscular functions. Thus, muscles will remain active and flexible.

Another example of pressure on neck by asanas increases blood supply to the thyroid gland which secrete hormones thyroxine and tryptophan. Both these hormones result to increase good health. A growth hormone is also secreted by it, is somatotropin which promote body growth through increase in metabolic activities. Such exercises are of importance to children to increase their growth.

During pranayama breath holding is an important aspect. Usually, we breath 14-16 times per minute. There is an old saying that our breath is counted. We have to breathe a definite number of times in our life. This was based on purely scientific experiments and observations. We inhale oxygen which oxidizes the food to give energy that we require every moment. A delay of even one or two minutes the oxygen deficiency may be fatal. But remember that human body cells are covered by a lipid (fat) containing membrane. Oxygen has to pass through it to reach the cell mitochondria where oxygen produced water combining with hydrogen. If this reaction is not performed all the energy producing reactions will be stopped. When oxygen crosses the lipids membrane it oxidizes the membrane lipids which are repaired by the cellular enzymes. More number of times the oxygen enters the cell more will be the damage and more energy will be required to repair the membrane. By practicing the pranayama exercises you can reduce the breathing to 8 -10 times per minute instead of 14-16 times thereby prolonging the life span of a pranayama practitioner. Another important effect of holding of breath inside compels the hemoglobin to release hemoglobin to release more oxygen at a time in to the cell. During normal breathing hemoglobin releases only 40% of loaded oxygen into the cells, rest 60% is remain bound to it. By holding breath to longer duration more oxygen will be released into the cells.

Another important fact is that our brain works very fast and all the time even during sleep. There occur all chemical reactions which consume large amount of energy. Yogic exercises and pranayama allow the brain to concentrate on the portion of body on stress point or on breathing. This results in reducing the mental activities and save large amount energy which is later used by body and brain for useful work. You might have heard about the mental powers of Rishis and Yogis who can tell many unseen incidences. Their concentration powers were tremendously high.

## CONCLUSION

A regular and balanced practice of yogic exercises and pranayama techniques keep your body flexible, active and healthy except hereditary ailments. Our body has the power to cure all types of sicknesses including the cancer. Only you have to think positive and keep your body fit. For example: - if there is a pain in any part of our body. Our cells secrete small polypeptides called enkephalin which reduces the pain. Though cells make them in small quantity but they are more effective than any pain killer. If you use pain killer medicine regularly then these cells will stop synthesizing them a longer use of such medicines may render these cells inactive leading to another ailment. Once our body is prepared for exercise they must be continued because with the time our body became ready for these activities. A regular and timely practice is required for these exercises. If you do not work your body cells will not make these compound. Body cells work only whenever there is any requirement. Thus remember our body is an excellent and sensible machine so maintain it in a good form.

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